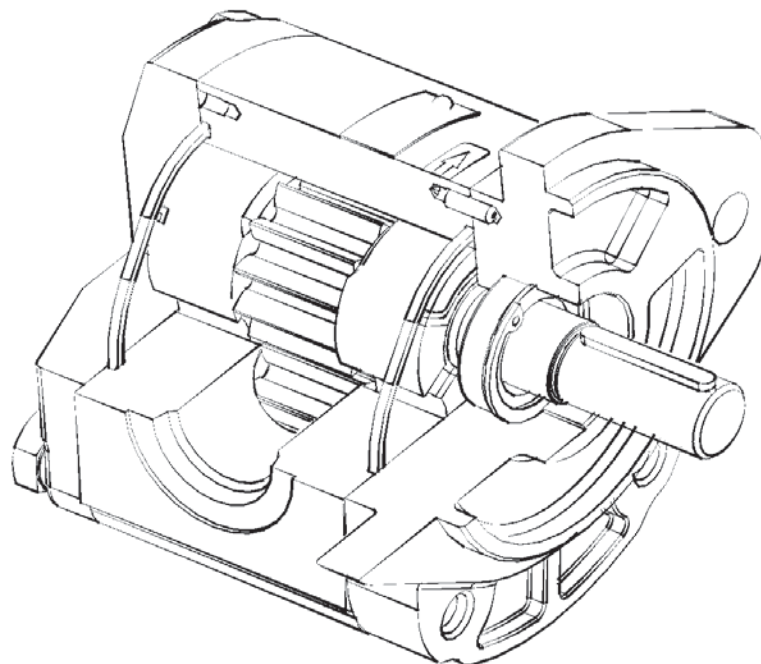


Displacement from 4 to 31 ccm
Pressure up to 280 bar
Speed from 500 to 4000 RPM

GEAR PUMPS
T3

TABLE OF CONTENTS

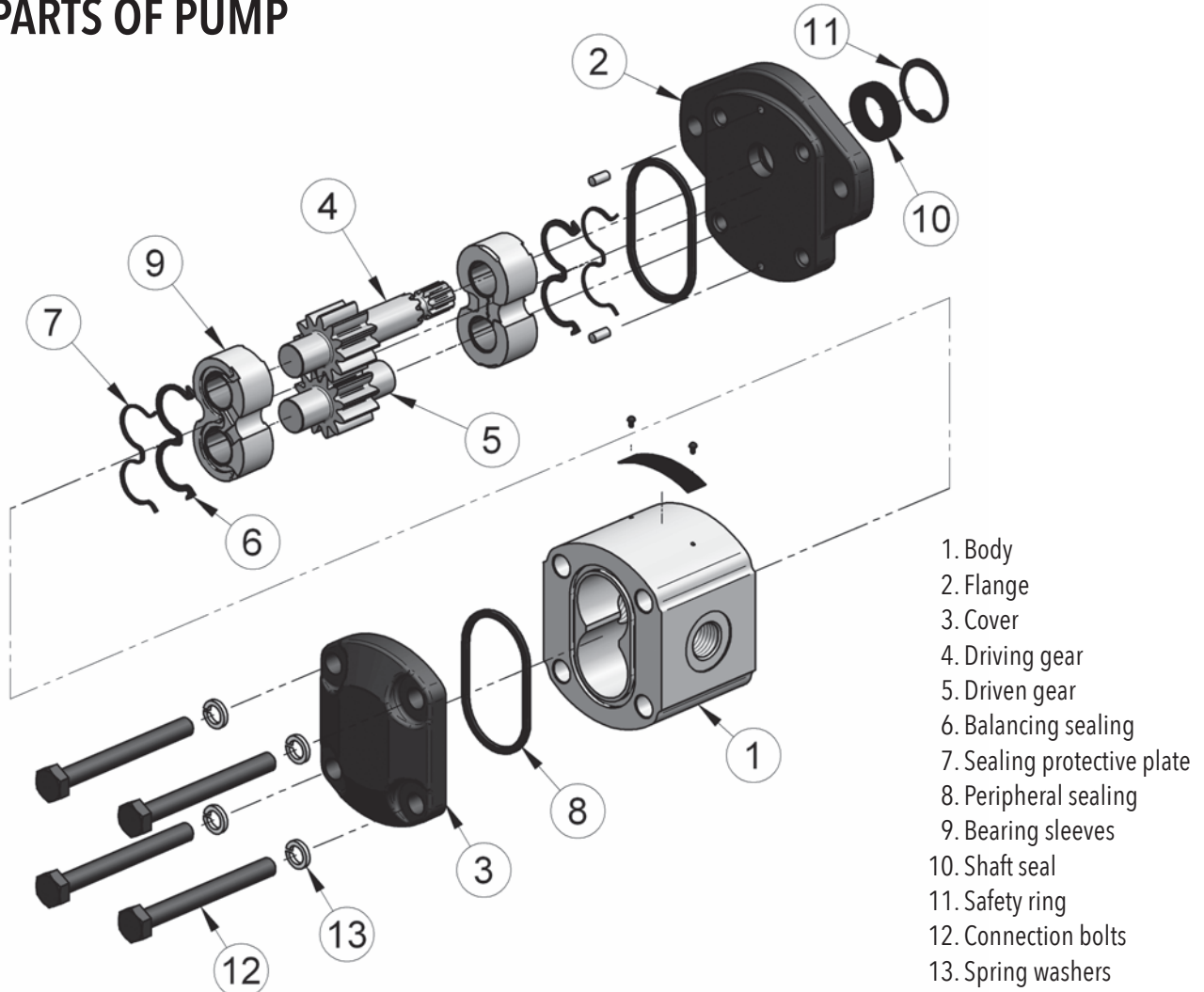
DESCRIPTION.....	2
BASIC PARTS OF PUMP	2
PARAMETER TABLE.....	3
FORMULAS USED FOR CALCULATION.....	4
PUMP EFFICIENCIES	4
WORKING LIQUID.....	5
PRESSURE LOAD.....	5
DIRECTION OF ROTATION	6
REVERSIBLE DESIGN.....	6
T3 FLOW RATE AND POWER CURVES.....	7
ORDER KEY - SINGLE VERSION	10
ORDER KEY - MULTIPLE VERSION.....	11
COMBINATIONS OF FLANGES AND SHAFTS	12
FLANGE DESIGN	13
DRIVE SHAFTS.....	14
LIQUID INLET AND OUTLET CONNECTION.....	17
CATALOGUE SHETS OF T3 SERIES BASIC DESIGNS.....	18
NOTES	26



DESCRIPTION

- Pumps of T3 series with external gearing are applicable for its simple design, compact dimension and a wide range of types, in modern hydraulic systems, handling technologies and mobile hydraulics.
- Basic execution is composed from a few parts. The body of pump are produced from heavy duty aluminium alloy. Cover and Flange are from iron grey or aluminium alloy. All flange as well as liquid inlets and outlets (location on side - in body or axial - in cover) comply with all world-recognised standards. Gear wheels with 12 teeth are optimised to achieve a low noise level, are made of ultrahigh-strength steel. Wheel pins with high quality surface are stored in bearings, which are constantly lubricated and cooled with flow working liquid.
- Upon requirement on low weight and small size is appropriate a special shortened version (for use by lower continuous pressure) - designation T3K
- Available is also multiple-version pumps with inlets for each section or one common inlet.

BASIC PARTS OF PUMP



PARAMETER TABLE

Nominal Size Parameters	Sym.	Unit.	T3 4	T3 6	T3 8	T3 12	T3 16	T3 20	T3 25	T3 31	
Actual displacement	V_g	[cm ³]	4.03	6.02	8.05	12.08	16.10	20.12	25.16	31.21	
Rotation speed	nominal	n_n	[min ⁻¹]	1500	1500	1500	1500	1500	1500	1500	
	minimum	n_{min}	[min ⁻¹]	500	500	500	500	500	500	500	
	maximum	n_{max}	[min ⁻¹]	4000	4000	3600	3600	3200	3200	2800	2200
Pressure at inlet*	minimum	p_{1min}	[bar]	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	
	maximum	p_{1max}	[bar]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Pressure at outlet**	max. continuous	p_{2n}	[bar]	280	280	280	260	260	240	200	150
	maximum	p_{2max}	[bar]	290	290	290	280	280	250	220	170
	peak	p_3	[bar]	310	310	310	300	300	270	240	190
Nominal flow rate (min.) at n_n and p_{2n}	Q_n	[dm ³ .min ⁻¹]	5.40	8.10	11.04	16.56	22.56	28.20	35.25	43.71	
Maximum flow rate at n_{max} a p_{2max}	Q_{max}	[dm ³ .min ⁻¹]	15.68	23.52	28.22	42.34	50.18	62.72	68.60	66.84	
Nominal input power (max.) at n_n and p_{2n}	P_n	[kW]	3.33	5.00	6.52	9.06	11.82	11.82	13.30	13.74	
Maximum input power at n_{max} a p_{2max}	P_{max}	[kW]	8.77	13.15	15.78	22.04	26.12	29.02	26.46	21.91	
Weight	m	[kg]	2.60	2.65	2.75	2.95	3.10	3.35	3.50	3.80	

* Inlet pressure in the reversible design can be up to $p_1 = p_{2n} - 70 \text{ bar max}$. External drainage must be used in case of the reversible design.

** Outlet pressure in the reversible design is **10% lower** than shown in the table (depending on operating conditions – it is necessary to consult with the manufacturer).

FORMULAS USED FOR CALCULATION

Flow rate
 Q

$$Q = \frac{V_g \cdot n}{1000} \cdot \eta_v \quad [\text{dm}^3 \cdot \text{min}^{-1}]$$

V_g [cm^3] pump displacement
 n [min^{-1}] rotation speed
 η_v [-] volumetric efficiency

Displacement
 V_g

$$V_g = \frac{Q \cdot 1000}{n \cdot \eta_v} \quad [\text{cm}^3]$$

Torque
 M_k

$$M_k = \frac{V_g \cdot p}{20 \cdot \pi \cdot \eta_m} \quad [\text{Nm}]$$

p [bar] required pressure at outlet
 η_m [-] mechanical efficiency

Input power
 P

$$P = \frac{V_g \cdot n \cdot p}{600 \cdot 1000 \cdot \eta_t} \quad [\text{kW}]$$

η_t [-] total efficiency

PUMP EFFICIENCIES

Volumetric efficiency

η_v

It determines the amount of flow losses. Its value is $\eta_v = 0,92 \div 0,98$ (depending on rotation speed, viscosity of working liquid and outlet pressure). It can be expressed as follows:

$$\eta_v = \frac{Q_{act.}}{Q_{theor}} \quad [-]$$

$Q_{act.}$ [$\text{dm}^3 \cdot \text{min}^{-1}$] actual flow rate
 Q_{theor} [$\text{dm}^3 \cdot \text{min}^{-1}$] theoretical flow rate

Mechanical efficiency

η_m

It determines mechanical losses. Its value is about $\eta_m = 0,85$. It can be expressed as follows:

$$\eta_m = \frac{M_{theor}}{M_{act.}} \quad [-]$$

$M_{act.}$ [Nm] actual torque
 M_{theor} [Nm] theoretical torque

Total efficiency

η_t

It is defined as product of η_v and η_m and determines difference between theoretical and actual required input power:

$$\eta_t = \eta_v \cdot \eta_m = \frac{P_{theor}}{P_{act.}} \quad [-]$$

$P_{act.}$ [kW] actual input power
 P_{theor} [kW] theoretical input power

WORKING LIQUID

- Mineral oils for hydraulic drives
- Hydraulic liquids based on plant oils suitable for hydraulic drives

Liquid temperature

- $t = -20 \div +80$ [°C]
when used with FKM (Viton) seal up to 120 [°C]

Cinematic viscosity

- Recommended (during continuous operation): $\nu = 20 \div 80 \cdot 10^{-6} [\text{m}^2 \cdot \text{s}^{-1}]$
- Maximum (cold starting, at viscosity >1000 , operating pressure <10 bar is permissible, speed $<1500 \cdot \text{min}^{-1}$): $\nu = 1200 \cdot 10^{-6} [\text{m}^2 \cdot \text{s}^{-1}]$
- Minimum (operating mode at $10 \cdot 10^{-6}$ up $20 \cdot 10^{-6}$ should be consulted with manufacturer): $\nu = 10 \cdot 10^{-6} [\text{m}^2 \cdot \text{s}^{-1}]$

Filtration coefficient β_{α}

$\beta_{25} 75 \geq$ (for pressure $p_2 < 200$ bar)

$\beta_{10} 75 \geq$ (for pressure $p_2 > 200$ bar)

Liquid contamination class according to ISO 4406

21/18/15 (for pressure $p_2 < 200$ bar)

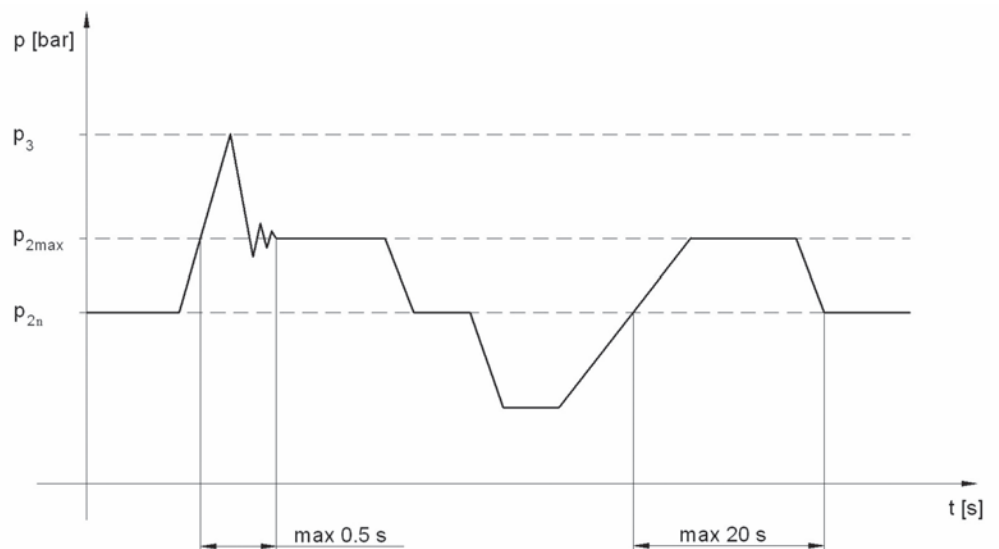
20/17/14 (for pressure $p_2 > 200$ bar)

Liquid contamination class according to NAS 1638

10 (for pressure $p_2 < 200$ bar)

8 (for pressure $p_2 > 200$ bar)

PRESSURE LOAD



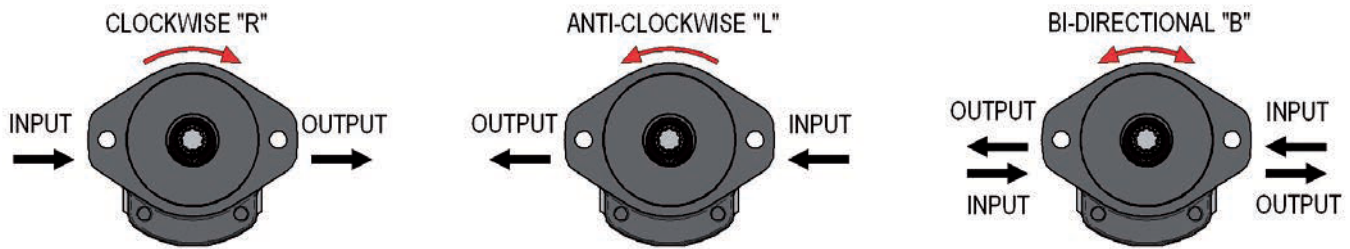
p_{2n} **max. contin. pressure** Max. working pressure, at which the pump can be operated without time limitation.

p_{2max} **max. pressure** Maximum pressure permissible for a short time, max. 20s.

p_3 **peak pressure** Short-time pressure (fractions of a second) arising in case of a sudden change of the operating mode; any excess of this pressure during operation is impermissible.

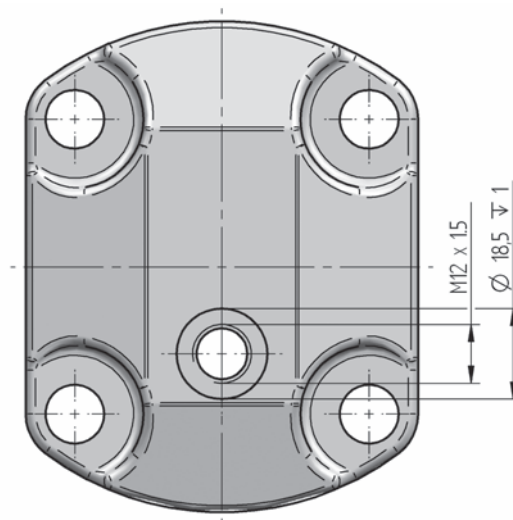
DIRECTION OF ROTATION

- Determine direction of rotation by looking at the drive shaft. The pump can only be used in the specified direction of rotation

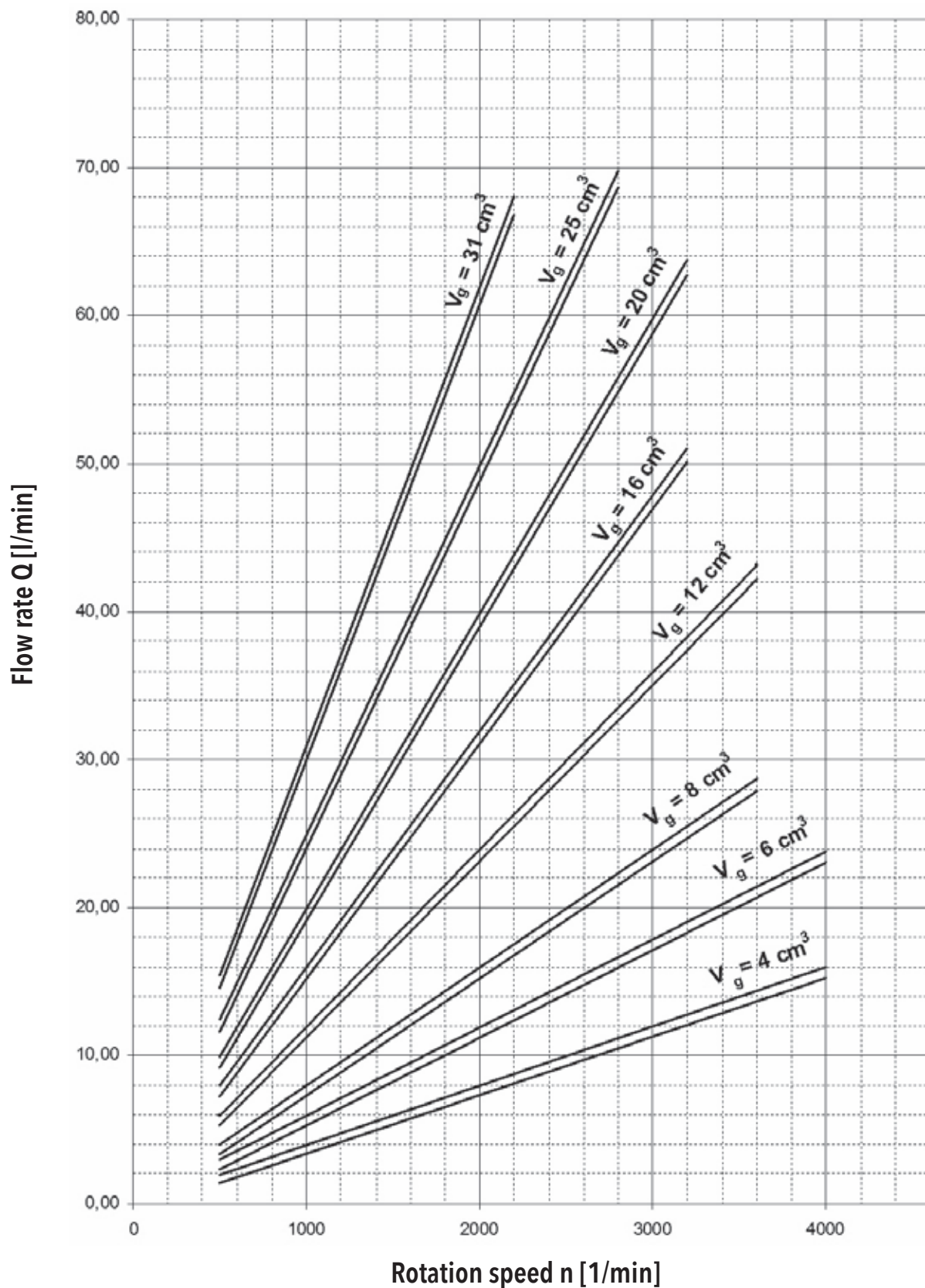


REVERSIBLE DESIGN

- The pumps with the possibility of bidirectional rotation have a different internal arrangement requiring drainage. Two types of drain are used - internal and external. The internal drainage is always interconnected with the outlet by means of valves. The external drainage is solved by an orifice located in the cover opposite the driven gear. (see. picture below). Dimension of hole for external drain are listed in tables in chapter **LIQUID INLET AND OUTLET CONNECTION** on page 16.

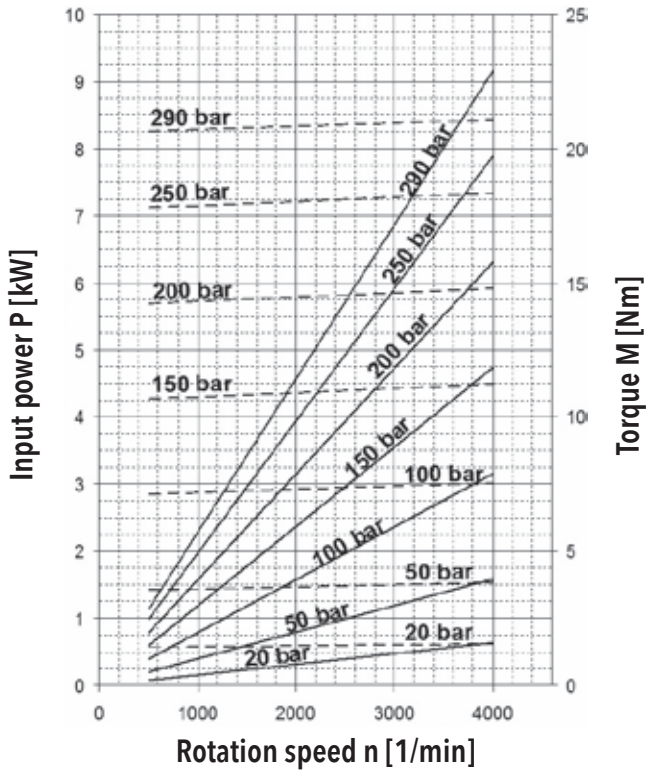


T3 FLOW RATE AND POWER CURVES

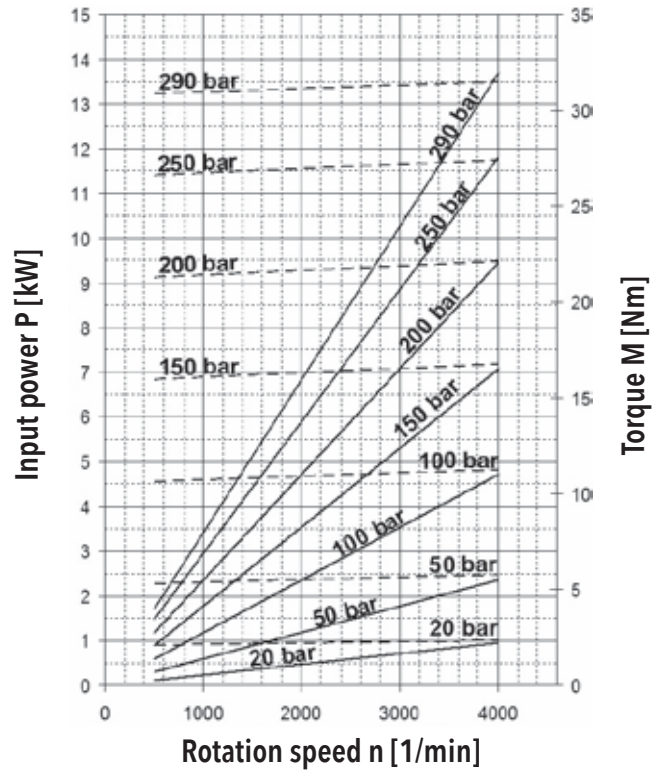


Above curves apply to ISO Vg 46 oil at temperature $t = 45^{\circ}\text{C}$.

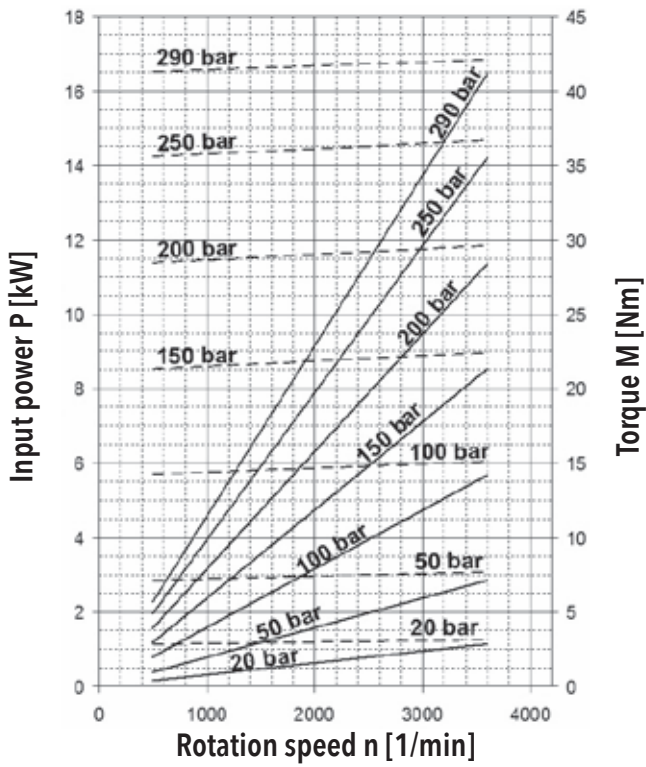
4,00 cm³



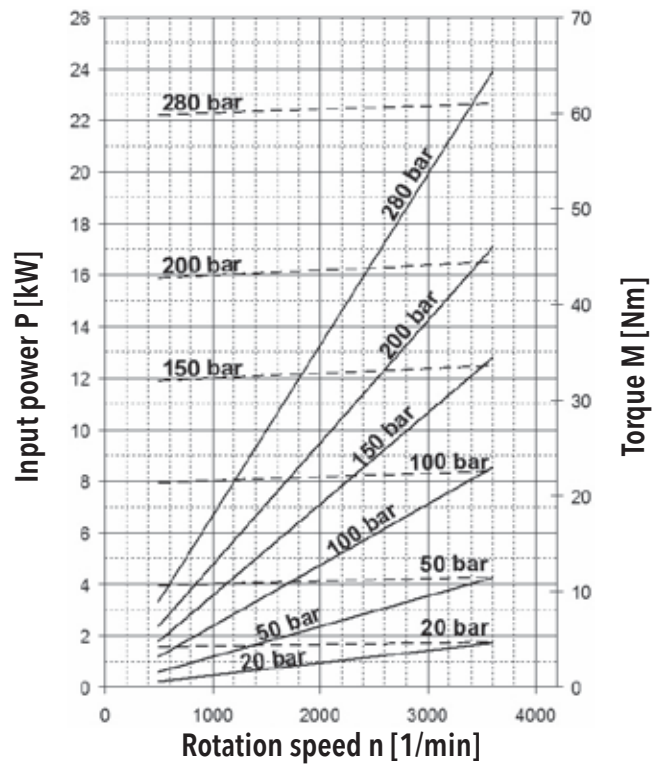
6,00 cm³

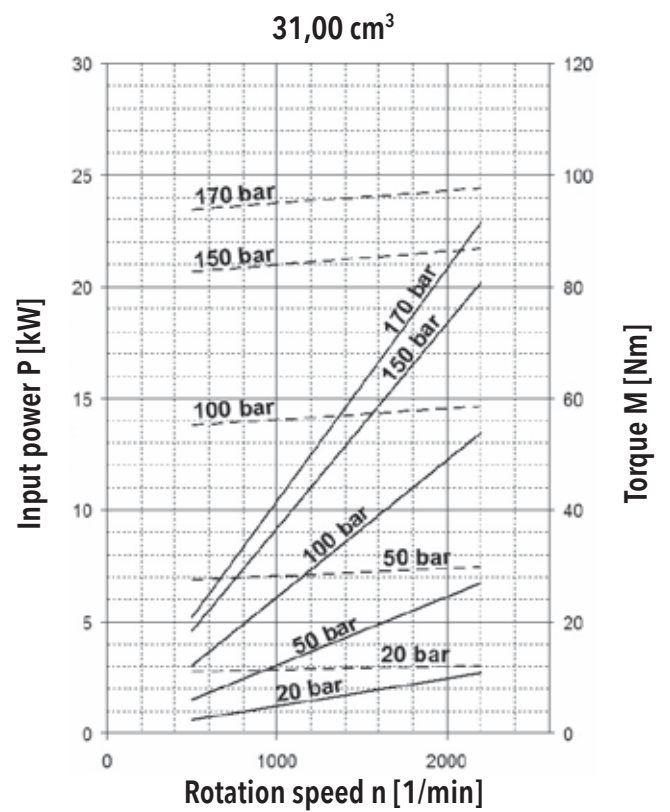
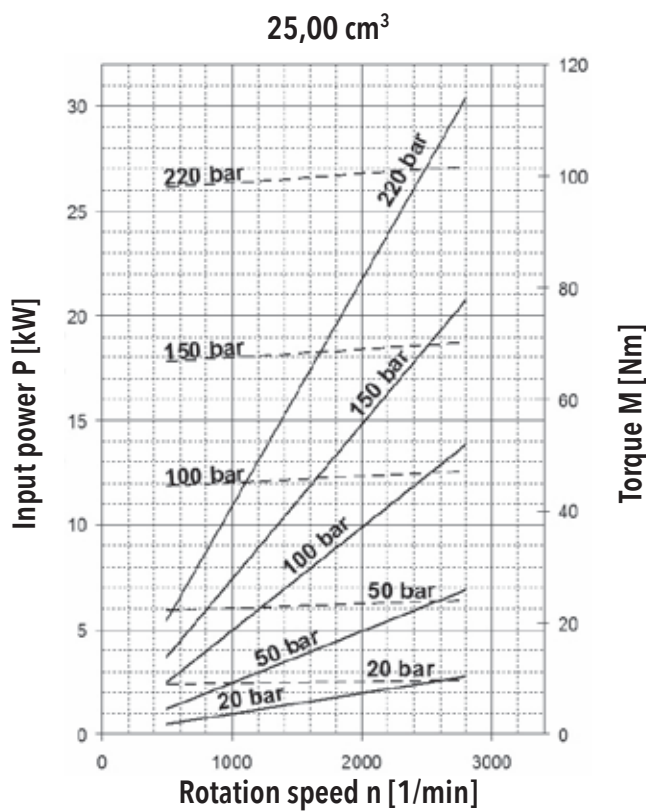
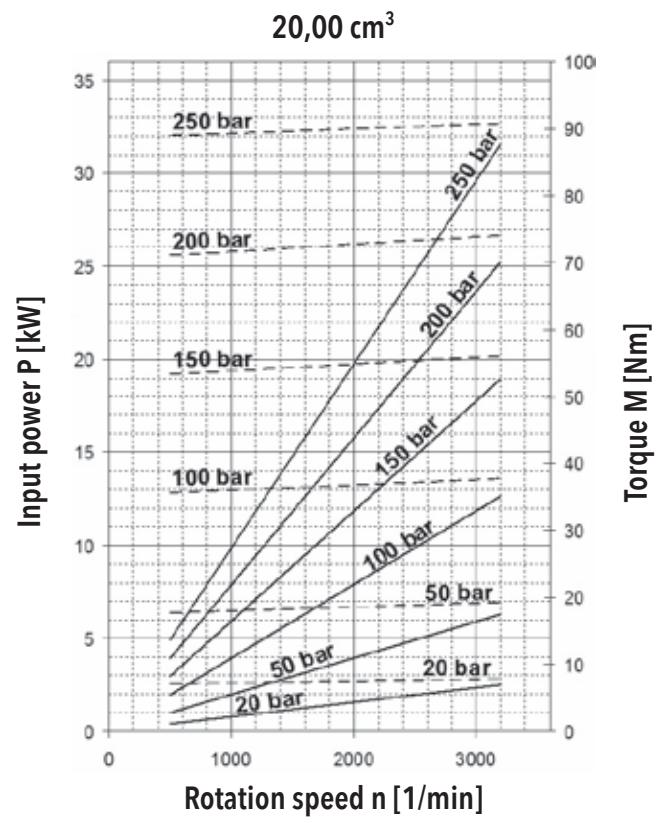
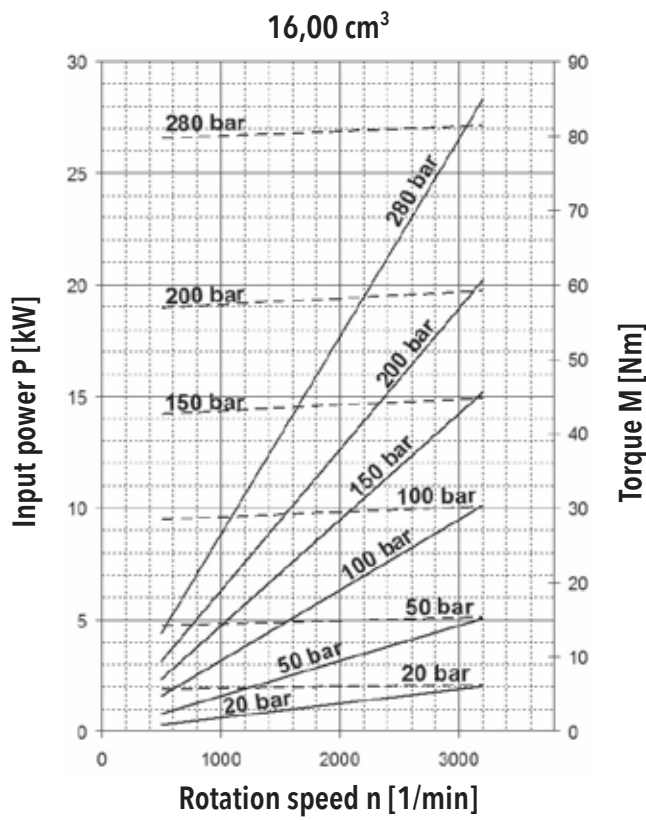


8,00 cm³



12,00 cm³





ORDER KEY - SINGLE VERSION

T3 - 16 R - S02 D04 - S G04 G03 - V . 001

Code	Displacement [cm ³]
4	4,03
6	6,02
8	8,05
12	12,08
16	16,10
20	20,12
25	25,16
31	31,21
XX	Other displacements on request

Code	Direction of Rotation
R	Clockwise
L	Anti-clockwise
B	Bi-directional

Code	Type
T3	T3 Series Gear Pump
T3K	T3 Series Gear Pump, short version

Code	Location of inlets and outlets
S	Side (in the body)
R	Rear (in the cover)
C	Combination
Z	Special design

Code	Drive shaft design
C07	Taper 1:8 Key width 3
C08	Taper 1:8 Key width 3,2
C09	Taper 1:8 Key width 4
C10	Taper 1:5 Key width 3
D04	Spline SAE 9T 16/32 DP
D06	Spline SAE 11T l = 32, 16/32 DP
D07	Spline SAE 11T l = 38, 16/32 DP
D08	Spline CSN 17x1,25
D09	Spline DIN 5482 B17x14
D10	Spline GOST 6033-80
D11	Spline 16x13x3,5
K07	Cross coupling
V09	Cylindric Ø5/8", Key 4x4
V11	Cylindric Ø15, Key 4x4
V12	Cylindric Ø3/4", Key 4,8x4,8
V13	Cylindric Ø20, Key 6x6
Z	Special design

Code	Special arrangements
-	No special arrangements
001	With front-end bearing type 1
002	With front-end bearing type 2
003	Sealed section for multiple version
004	Without shaft seal
005	Inlet in body, outlet in cover
006	Inlet in cover, outlet in body
007	Inlet in body, outlet in flange
008	Inlet in flange, outlet in body
009	Drain M12 x 1,5 in cover
010	With front-end bearing type 3
011	Drain G¼ in cover
012	Internal drain
013	Variseal
014	Shaft seal – double lip

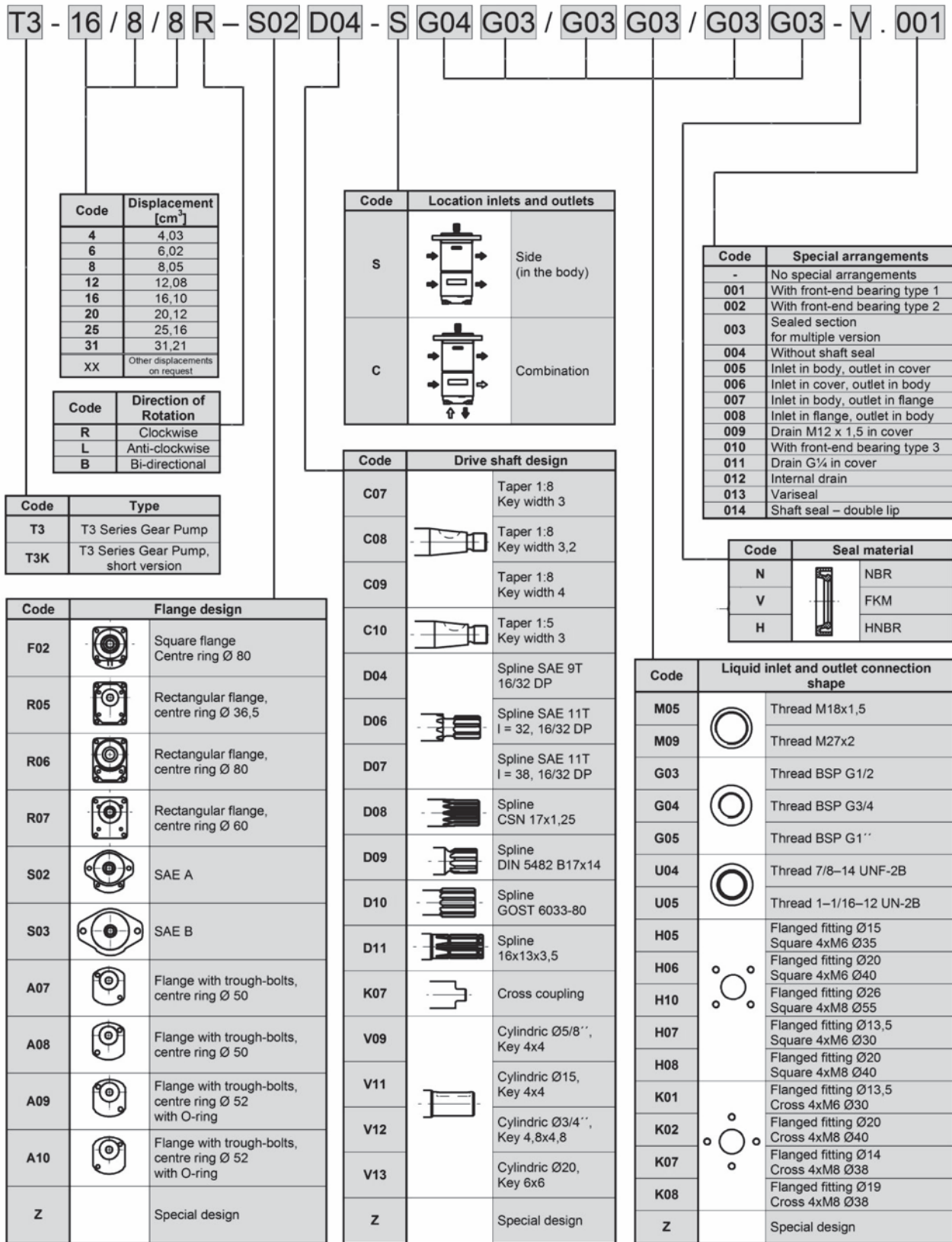
Code	Seal material
N	NBR
V	FKM
H	HNBR

Code	Flange design
F02	Square flange Centre ring Ø 80
R05	Rectangular flange, centre ring Ø 36,5
R06	Rectangular flange, centre ring Ø 80
R07	Rectangular flange, centre ring Ø 60
S02	SAE A
S03	SAE B
A07	Flange with trough-bolts, centre ring Ø 50
A08	Flange with trough-bolts, centre ring Ø 50
A09	Flange with trough-bolts, centre ring Ø 52 with O-ring
A10	Flange with trough-bolts, centre ring Ø 52 with O-ring
Z	Special design

Code	Liquid inlet and outlet connection shape
M05	Thread M18x1,5
M09	Thread M27x2
G03	Thread BSP G1/2
G04	Thread BSP G3/4
G05	Thread BSP G1"
U04	Thread 7/8–14 UNF-2B
U05	Thread 1–1/16–12 UN-2B
H05	Flanged fitting Ø15 Square 4xM6 Ø35
H06	Flanged fitting Ø20 Square 4xM6 Ø40
H10	Flanged fitting Ø26 Square 4xM8 Ø55
H07	Flanged fitting Ø13,5 Square 4xM6 Ø30
H08	Flanged fitting Ø20 Square 4xM8 Ø40
K01	Flanged fitting Ø13,5 Cross 4xM6 Ø30
K02	Flanged fitting Ø20 Cross 4xM8 Ø40
K07	Flanged fitting Ø14 Cross 4xM8 Ø38
K08	Flanged fitting Ø19 Cross 4xM8 Ø38
Z	Special design

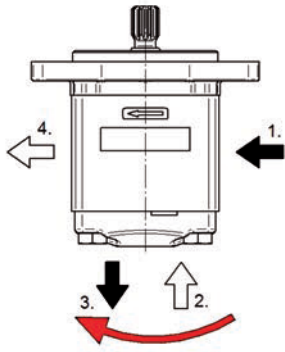
An example of designation for the T3 anti-clockwise pump with displacement of 8 cm³, SAE A flange, SAE 9T spline, BSP inlets in cover and standard NBR seal without special arrangements: **T3-8L-S02D04-RG03G03-N**

ORDER KEY - MULTIPLE VERSION

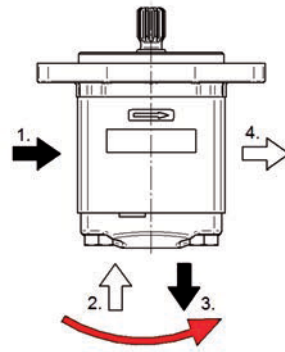


An example of designation for the T3 three-section clockwise pump with displacements of 12, 8 and 6 cm³, rectangular flange, centre ring Δ 36.5, cone 1:8, one metric common inlet and three outlets and FKM seal without special arrangements: **T3-12/8/6R-R05C07-SNM05/M09M05/NM05-V**

Note: In case of combination inlets, with the code „C” is respected following sequence of inlets and outlets:



For clockwise and reverse gear pump,
in direction clockwise



For anti-clockwise gear pump,
in direction anti-clockwise

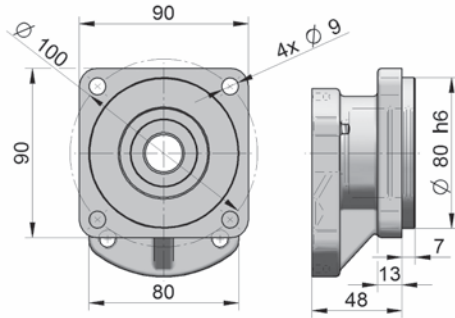
For. ex....: T3-12R-S02D04-CG04 G04 G03 G03 -N
1. 2. 3. 4.

COMBINATIONS OF FLANGES AND SHAFTS

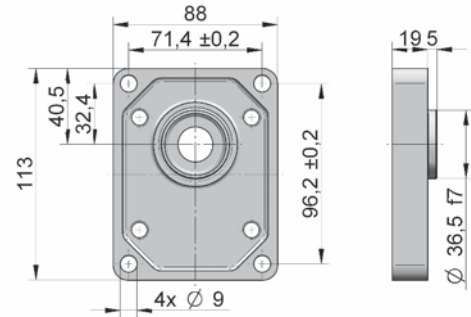
		FLANGE DESIGN													
		F02	R05	R06	R07	S02	S03	A07	A08	A09	A10				
DRIVE SHAFT	C07		●												
	C08		●												
	C09		●												
	C10				●			●	●						
	D04					●	●								
	D06					●	●								
	D07					●	●								
	D08			●											
	D09				●			●	●						
	D10		●												
	D11					●									
	K05									●	●				
	V09					●	●								
	V11			●											
	V12					●	●								
V13		●													

FLANGES DESIGN

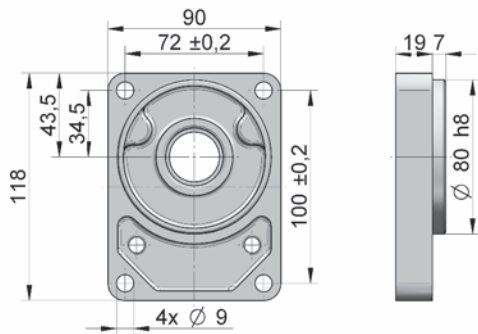
F02:



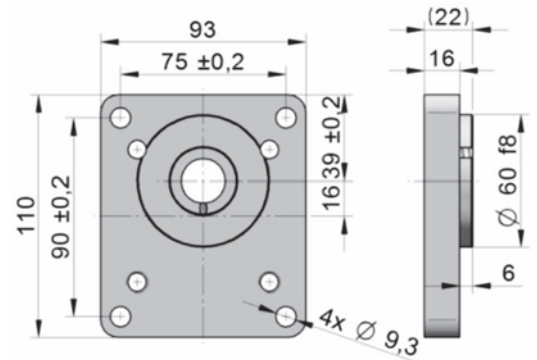
R05:



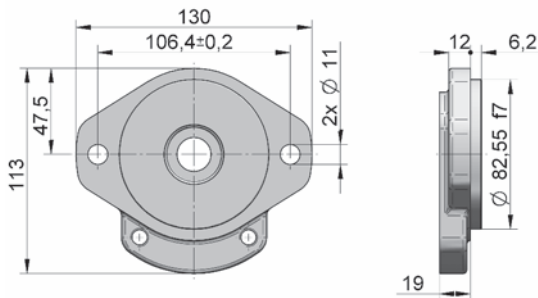
R06:



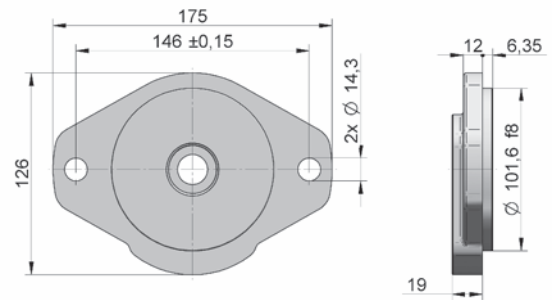
R07:



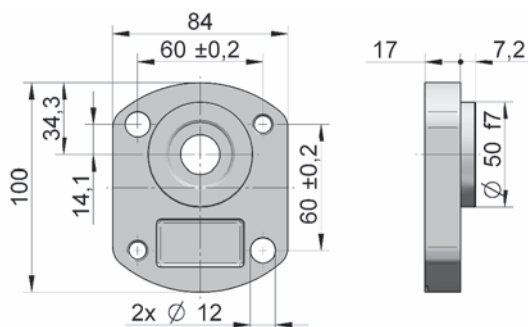
S02:



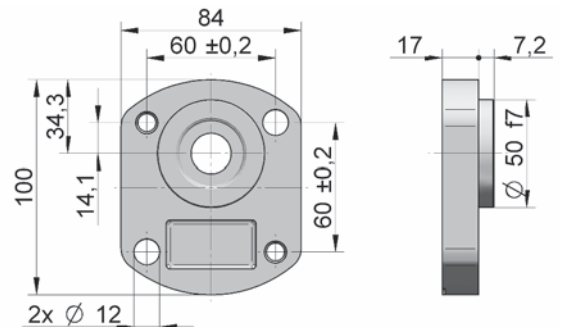
S03:



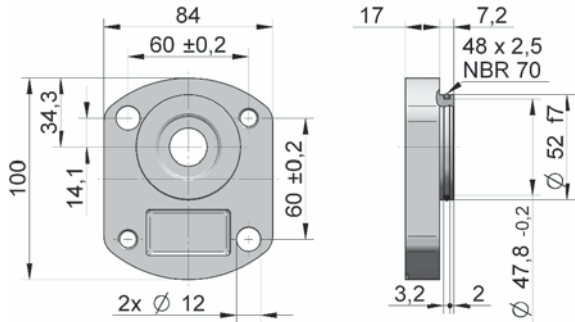
A07:



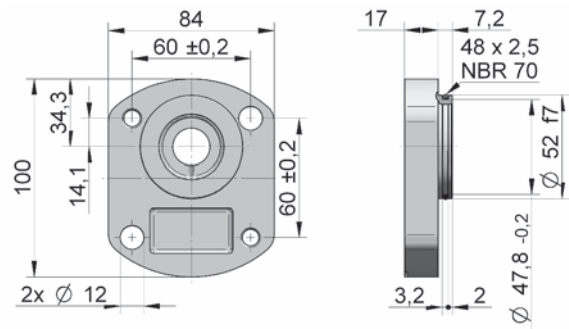
A08:



A09:



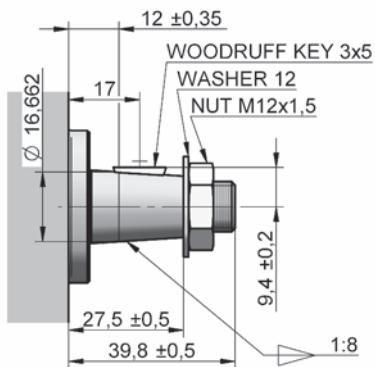
A10:



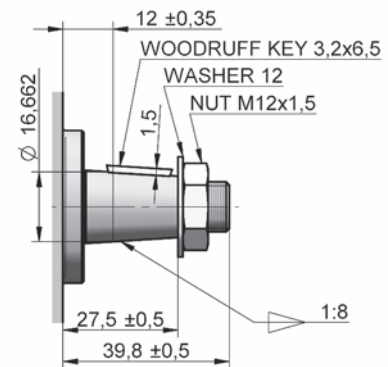
DRIVE SHAFT

Note: Maximum allowed torque on a drive shaft is 100 Nm.
To use V13 shaft, overpriced shaft is needed.

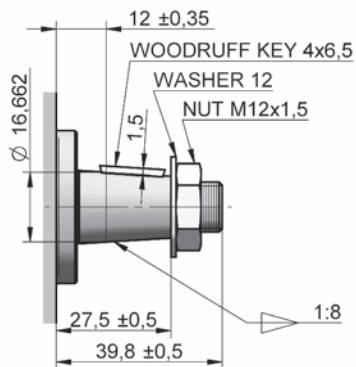
C07:



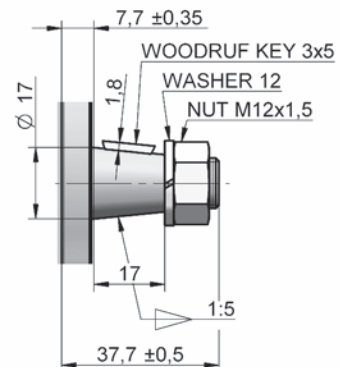
C08:



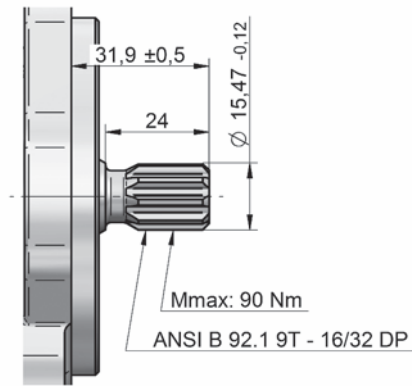
C09:



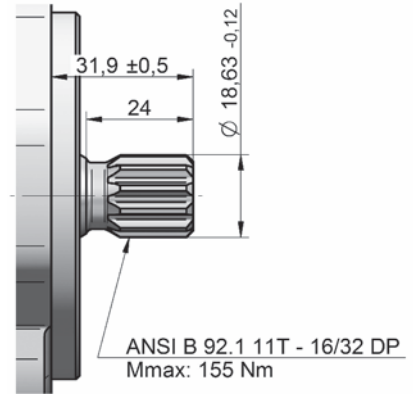
C10:



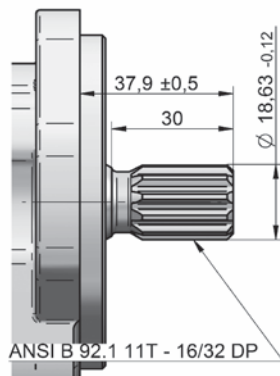
D04:



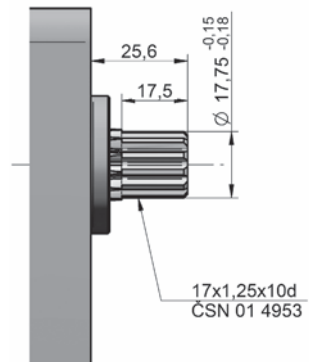
D06:



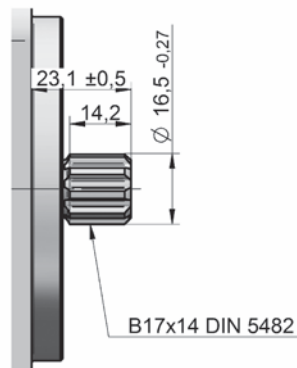
D07:



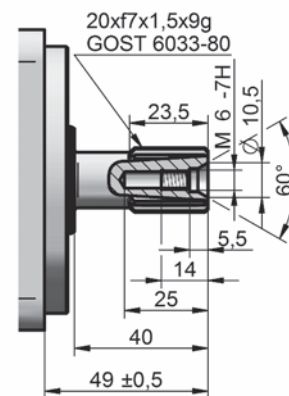
D08:



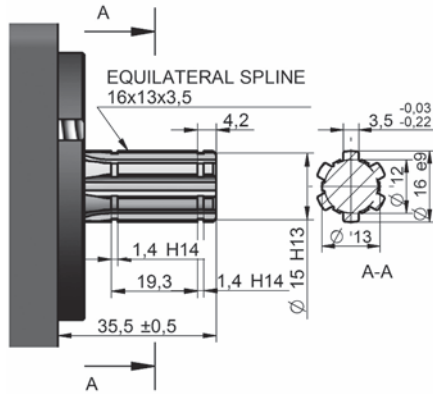
D09:



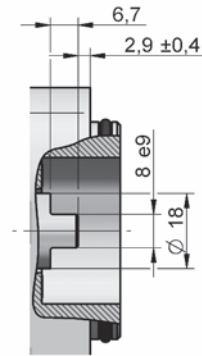
D10:



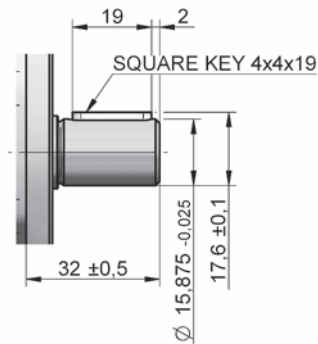
D11:



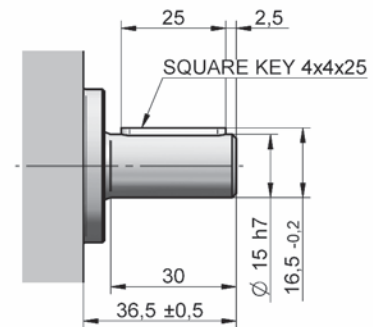
K07:



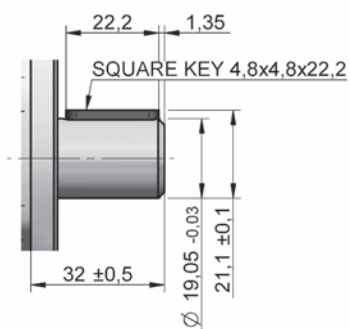
V09:



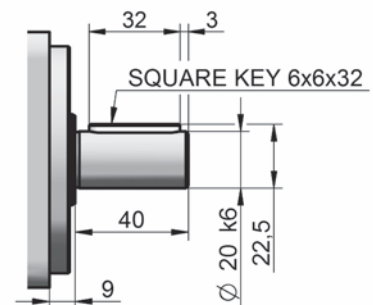
V11:



V12:

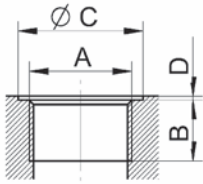


V13:



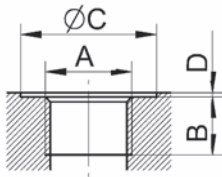
LIQUID INLET AND OUTLET CONNECTION

Metric thread according to ISO 6149



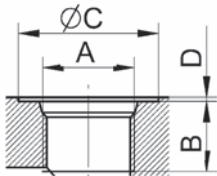
Displacement [cm ³]	kód	Inlet				kód	Outlet			
		A	B	C	D		A	B	C	D
all	M09	M 27x2	16	33	1	M05	M 18x1,5	14	24	1

BSPP pipe thread according to ISO 228 - 1



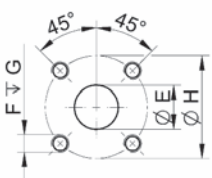
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
to 10	G03	G 1/2"	14	33	1	G03	G 1/2"	14	33	1
10 - 25	G04	G 3/4"	16	39	1	G03	G 1/2"	14	33	1
above 25	G05	G 1"	18	45	1	G04	G 3/4"	16	39	1

UNF thread according to SAE



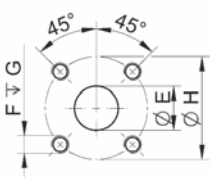
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
to 10	U04	7/8-14 UNF-2B	17	34	1	U04	7/8-14 UNF-2B	17	34	1
11 - 31	U05	1-1/16-12 UNF-2B	19	41	1	U04	7/8-14 UNF-2B	17	34	1

Flanged fittings according to DIN 8901/8902



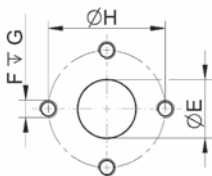
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
all	H06	20	M6	13	40	H05	15	M6	13	35
all	H10	25	M8	13	55	H05	15	M6	13	35

Flanged fittings - „square“



Displacement [cm ³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
all	H08	20	M8	13	40	H07	13.5	M6	13	30

Flanged fittings - „cross“

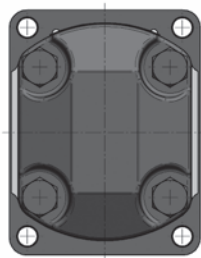
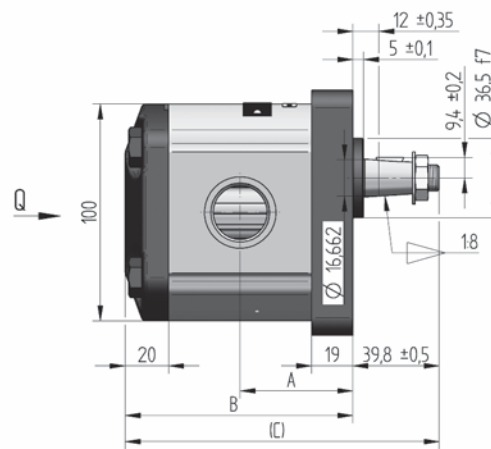
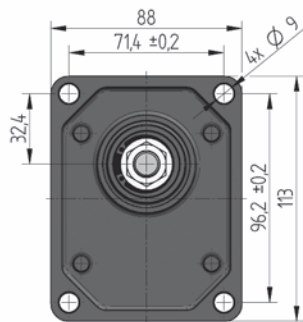


Displacement [cm ³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
all	K02	20	M8	13	40	K01	13.5	M6	13	30
to 10	K07	14	M8	13	38	K07	14.0	M8	13	38
above 10	K08	19	M8	13	38	K07	14.0	M8	13	38

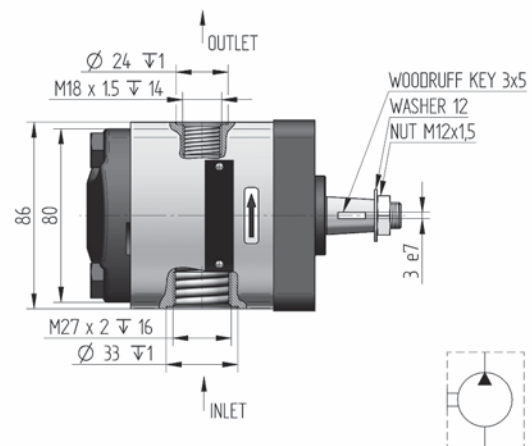
Drain

Displacement [cm ³]	Code	Outlet			
		A	B	C	D
all	M02	M 12x1,5	12	20	1
	G01	G 1/4	12	45	1
	U01	7/16-20 UNF-2B	13	21	1
	U02	9/16-18 UNF-2B	14	25	1

CATALOGUE SHETS OF T3 SERIES BASIC DESIGNS

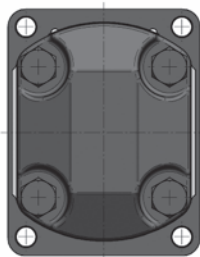
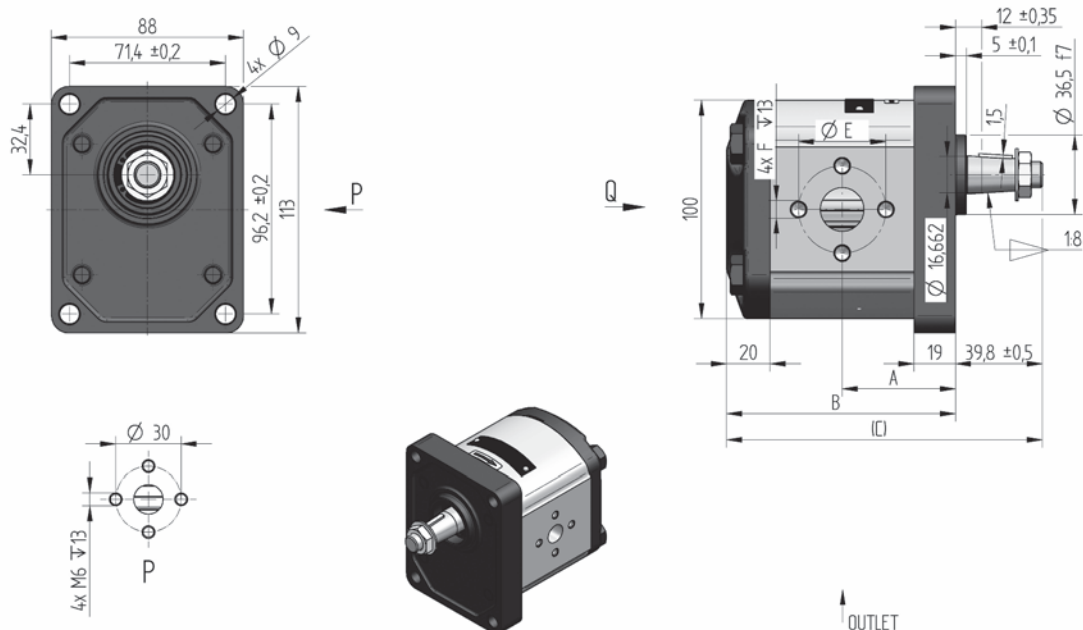


Q

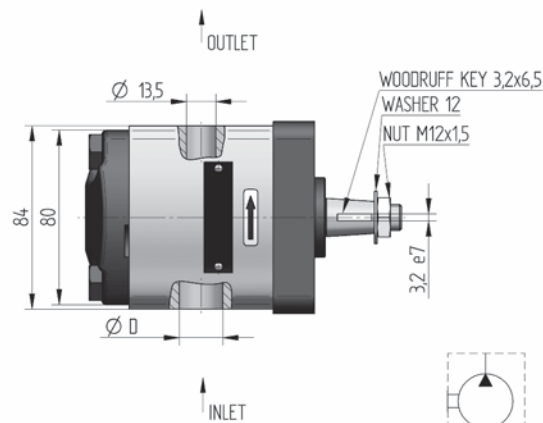


THE CLOCKWISE PUMP IS SHOWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension		
							A [mm]	B [mm]	C [mm]
T3-31R- R05C07-SM09M05-N	184 9257	R	31	150	500	2 200	63.7	128.5	168.3
T3-31L- R05C07-SM09M05-N		L							
T3-25R- R05C07-SM09M05-N	184 9256	R	25	200	500	2 800	59.0	119.1	158.9
T3-25L- R05C07-SM09M05-N		L							
T3-20R- R05C07-SM09M05-N	184 9255	R	20	240	500	3 200	55.0	111.2	151.0
T3-20L- R05C07-SM09M05-N		L							
T3-16R- R05C07-SM09M05-N	184 9254	R	16	260	500	3 200	51.9	104.9	144.7
T3-16L- R05C07-SM09M05-N		L							
T3-12R- R05C07-SM09M05-N	184 9253	R	12	260	500	3 600	48.8	98.6	138.4
T3-12L- R05C07-SM09M05-N		L							
T3-8R- R05C07-SM09M05-N	184 9252	R	8	280	500	3 600	45.6	92.3	132.1
T3-8L- R05C07-SM09M05-N		L							
T3-6R- R05C07-SM09M05-N	184 9251	R	6	280	500	4 000	44.0	89.2	129.0
T3-6L- R05C07-SM09M05-N		L							
T3-4R- R05C07-SM09M05-N	184 9250	R	4	280	500	4 000	42.5	86.0	125.8
T3-4L- R05C07-SM09M05-N		L							



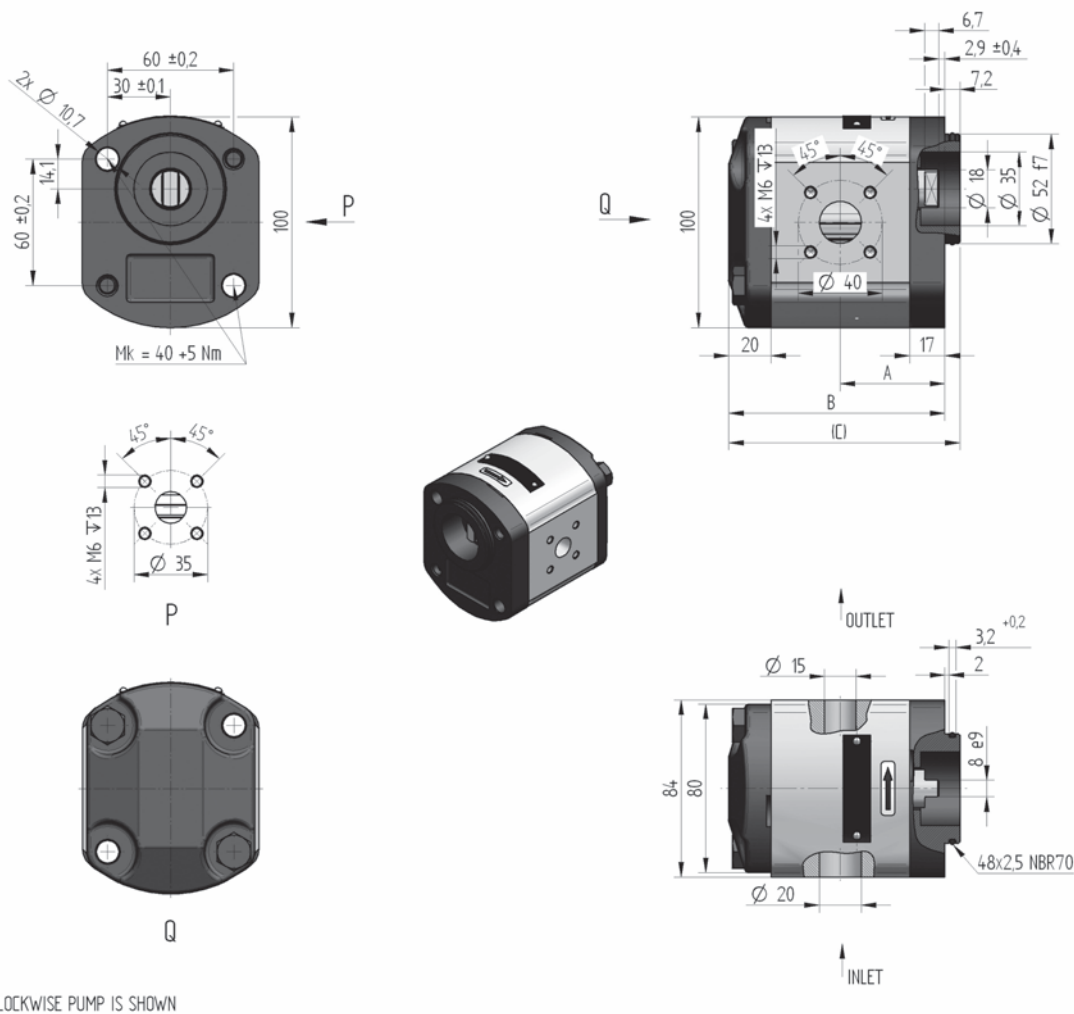
Q



INLET

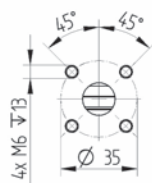
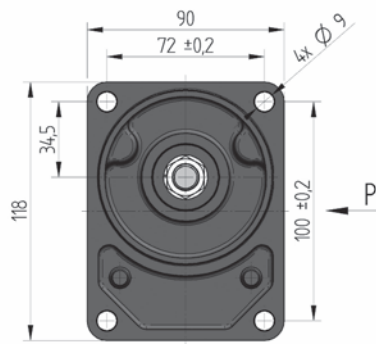
THE CLOCKWISE PUMP IS SHOWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension					
							A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
T3-31R- R05C08-SK02K01-N	184 9265	R	31	150	500	2 200	63.7	128.5	168.3	Δ 20	Δ 40	M8
T3-31L- R05C08-SK02K01-N		L										
T3-25R- R05C08-SK02K01-N	180 9264	R	25	200	500	2 800	59.0	119.1	158.9	Δ 20	Δ 40	M8
T3-25L- R05C08-SK02K01-N		L										
T3-20R- R05C08-SK02K01-N	184 9263	R	20	240	500	3 200	55.0	111.2	151.0	Δ 20	Δ 40	M8
T3-20L- R05C08-SK02K01-N		L										
T3-16R- R05C08-SK02K01-N	184 9262	R	16	260	500	3 200	51.9	104.9	144.7	Δ 20	Δ 40	M8
T3-16L- R05C08-SK02K01-N		L										
T3-12R- R05C08-SK02K01-N	184 9261	R	12	260	500	3 600	48.8	98.6	138.4	Δ 20	Δ 40	M8
T3-12L- R05C08-SK02K01-N		L										
T3-8R- R05C08-SK01K01-N	184 9260	R	8	280	500	3 600	45.6	92.3	132.1	Δ 13.5	Δ 30	M6
T3-8L- R05C08-SK01K01-N		L										
T3-6R- R05C08-SK01K01-N	184 9259	R	6	280	500	4 000	44.0	89.2	129.0	Δ 13.5	Δ 30	M6
T3-6L- R05C08-SK01K01-N		L										
T3-4R- R05C08-SK01K01-N	184 9258	R	4	280	500	4 000	42.5	86.0	125.8	Δ 13.5	Δ 30	M6
T3-4L- R05C08-SK01K01-N		L										

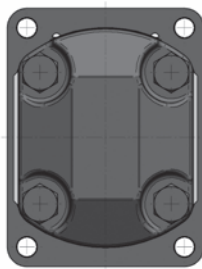


THE CLOCKWISE PUMP IS SHOWN

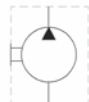
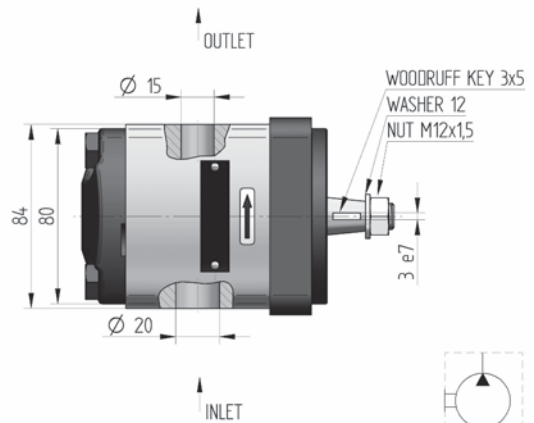
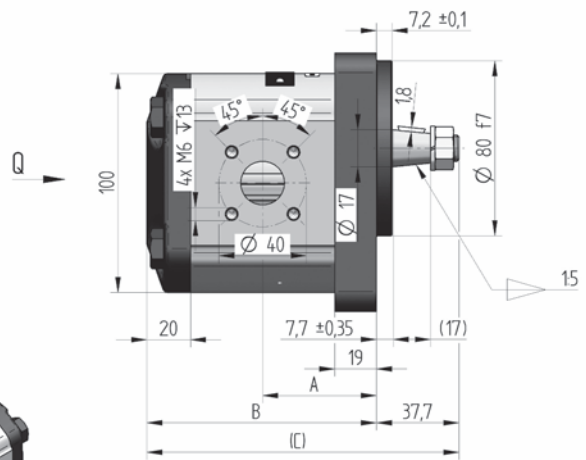
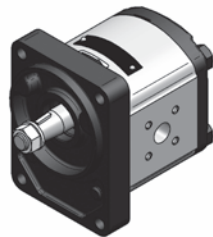
Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension		
							A [mm]	B [mm]	C [mm]
T3-31R- A09K07-SH06H05-N.004	184 9281	R	31	150	500	2 200	61.7	126.5	133.7
T3-31L- A09K07-SH06H05-N.004		L							
T3-25R- A09K07-SH06H05-N.004	184 9280	R	25	200	500	2 800	57.0	117.1	124.3
T3-25L- A09K07-SH06H05-N.004		L							
T3-20R- A09K07-SH06H05-N.004	184 9279	R	20	240	500	3 200	53.0	109.2	116.4
T3-20L- A09K07-SH06H05-N.004		L							
T3-16R- A09K07-SH06H05-N.004	184 9278	R	16	260	500	3 200	49.9	102.9	110.1
T3-16L- A09K07-SH06H05-N.004		L							
T3-12R- A09K07-SH06H05-N.004	184 9277	R	12	260	500	3 600	46.8	96.6	103.8
T3-12L- A09K07-SH06H05-N.004		L							
T3-8R- A09K07-SH06H05-N.004	184 9276	R	8	280	500	3 600	43.6	90.3	97.5
T3-8L- A09K07-SH06H05-N.004		L							
T3-6R- A09K07-SH06H05-N.004	184 9275	R	6	280	500	4 000	42.0	87.2	94.4
T3-6L- A09K07-SH06H05-N.004		L							
T3-4R- A09K07-SH06H05-N.004	184 9274	R	4	280	500	4 000	40.5	84.0	91.2
T3-4L- A09K07-SH06H05-N.004		L							



P

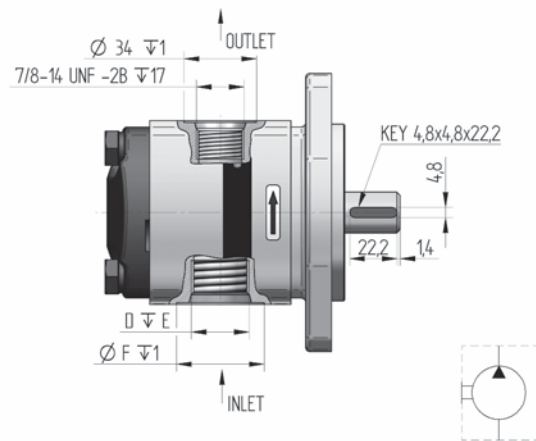
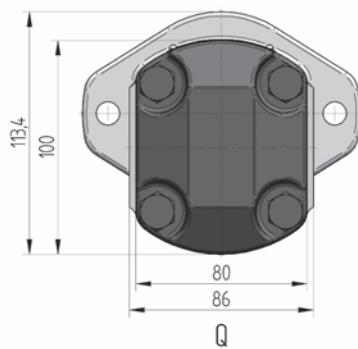
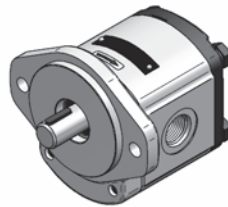
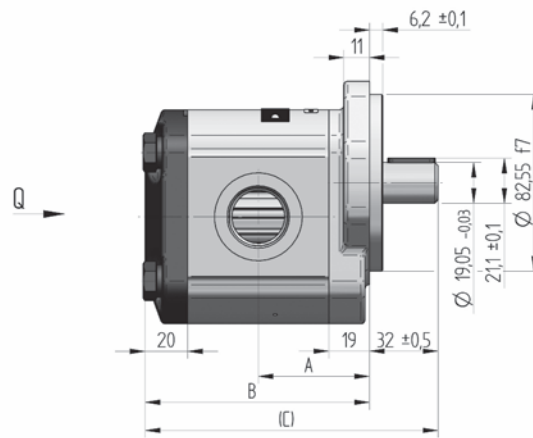
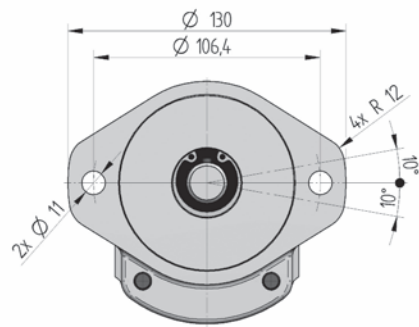


Q



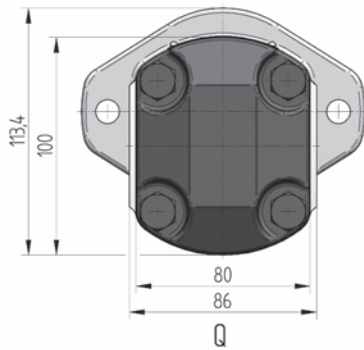
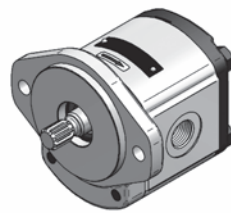
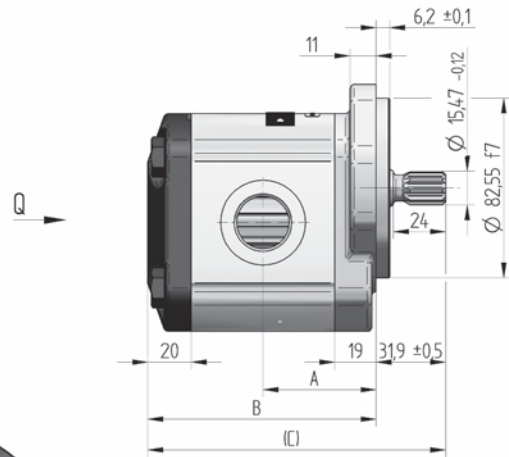
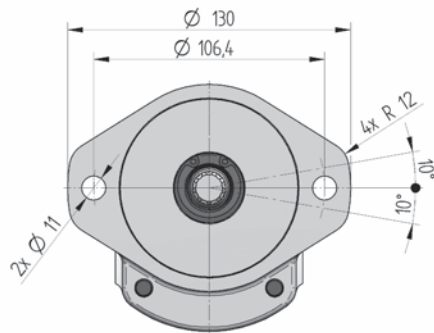
THE CLOCKWISE PUMP IS SHOWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension		
							A [mm]	B [mm]	C [mm]
T3-31R- R06C10-SH06H05-N	184 9273	R	31	150	500	2 200	63.7	128.5	168.3
T3-31L- R06C10-SH06H05-N		L							
T3-25R- R06C10-SH06H05-N	184 9272	R	25	200	500	2 800	59.0	119.1	158.9
T3-25L- R06C10-SH06H05-N		L							
T3-20R- R06C10-SH06H05-N	184 9271	R	20	240	500	3 200	55.0	111.2	151.0
T3-20L- R06C10-SH06H05-N		L							
T3-16R- R06C10-SH06H05-N	184 9270	R	16	260	500	3 200	51.9	104.9	144.7
T3-16L- R06C10-SH06H05-N		L							
T3-12R- R06C10-SH06H05-N	184 9269	R	12	260	500	3 600	48.8	98.6	138.4
T3-12L- R06C10-SH06H05-N		L							
T3-8R- R06C10-SH06H05-N	184 9268	R	8	280	500	3 600	45.6	92.3	132.1
T3-8L- R06C10-SH06H05-N		L							
T3-6R- R06C10-SH06H05-N	184 9267	R	6	280	500	4 000	44.0	89.2	129.0
T3-6L- R06C10-SH06H05-N		L							
T3-4R- R06C10-SH06H05-N	184 9266	R	4	280	500	4 000	42.5	86.0	125.8
T3-4L- R06C10-SH06H05-N		L							

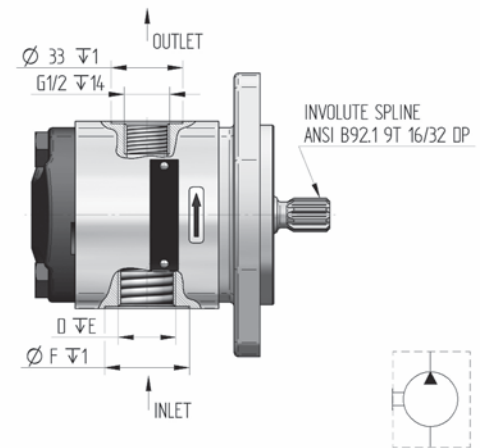


THE CLOCKWISE PUMP IS SHOWN

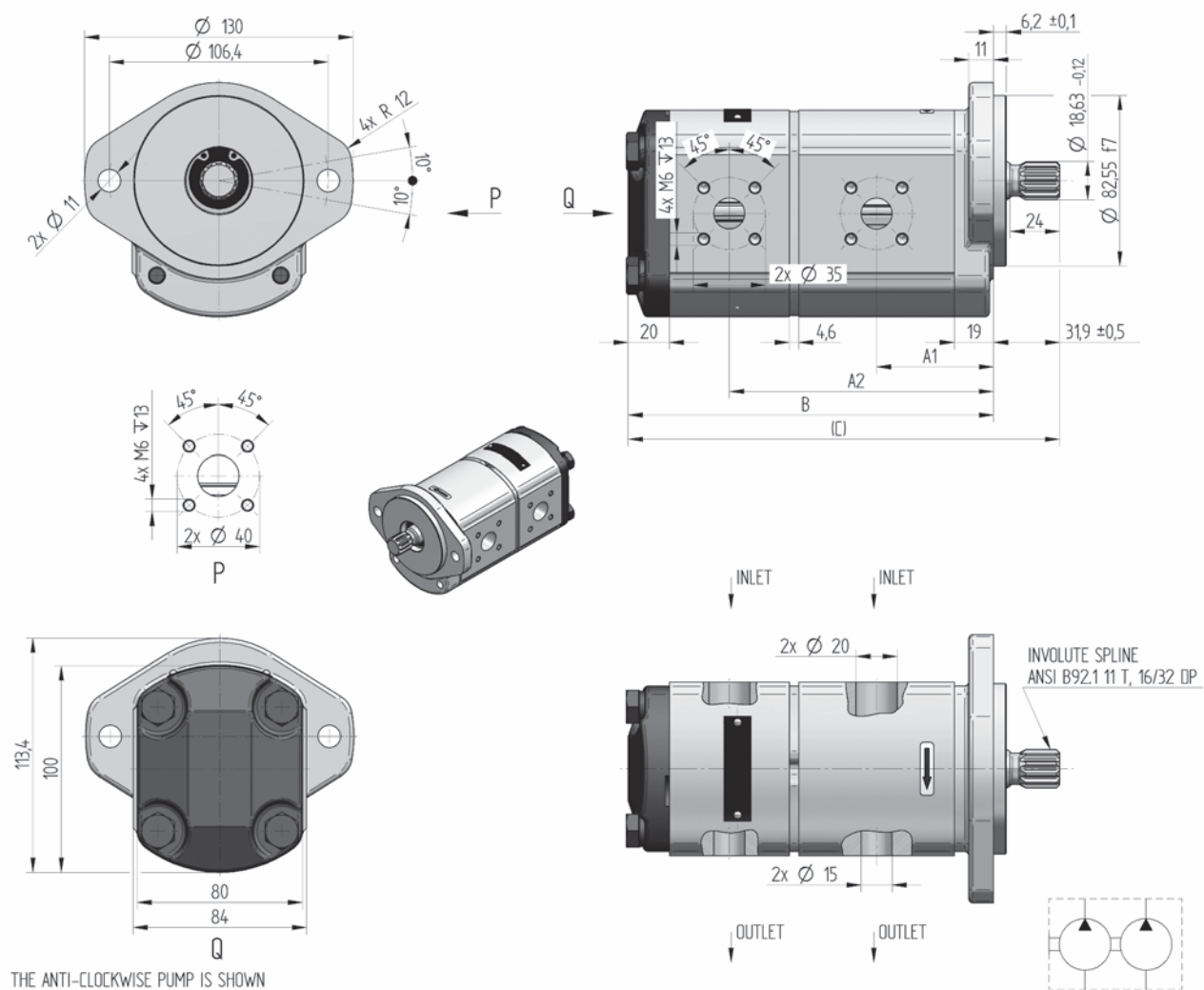
Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension					
							A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
T3-31R- S02V12-SU05U04-N		R	31	150	500	2 200	63.7	128.5	160.5	1-1/16-12 UN-2B	19	41
T3-31L- S02V12-SU05U04-N		L										
T3-25R- S02V12-SU05U04-N		R	25	200	500	2 800	59.0	119.1	151.1	1-1/16-12 UN-2B	19	41
T3-25L- S02V12-SU05U04-N		L										
T3-20R- S02V12-SU05U04-N		R	20	240	500	3 200	55.0	111.2	143.2	1-1/16-12 UN-2B	19	41
T3-20L- S02V12-SU05U04-N		L										
T3-16R- S02V12-SU05U04-N	184 9201	R	16	260	500	3 200	51.9	104.9	136.9	1-1/16-12 UN-2B	19	41
T3-16L- S02V12-SU05U04-N		L										
T3-12R- S02V12-SU05U04-N		R	12	260	500	3 600	48.8	98.6	130.6	1-1/16-12 UN-2B	19	41
T3-12L- S02V12-SU05U04-N		L										
T3-8R- S02V12-SU04U04-N		R	8	280	500	3 600	45.6	92.3	124.3	7/8-14 UNF-2B	17	34
T3-8L- S02V12-SU04U04-N		L										
T3-6R- S02V12-SU04U04-N		R	6	280	500	4 000	44.0	89.2	121.2	7/8-14 UNF-2B	17	34
T3-6L- S02V12-SU04U04-N		L										
T3-4R- S02V12-SU04U04-N		R	4	280	500	4 000	42.5	86.0	118.0	7/8-14 UNF-2B	17	34
T3-4L- S02V12-SU04U04-N		L										



THE CLOCKWISE PUMP IS SHOWN

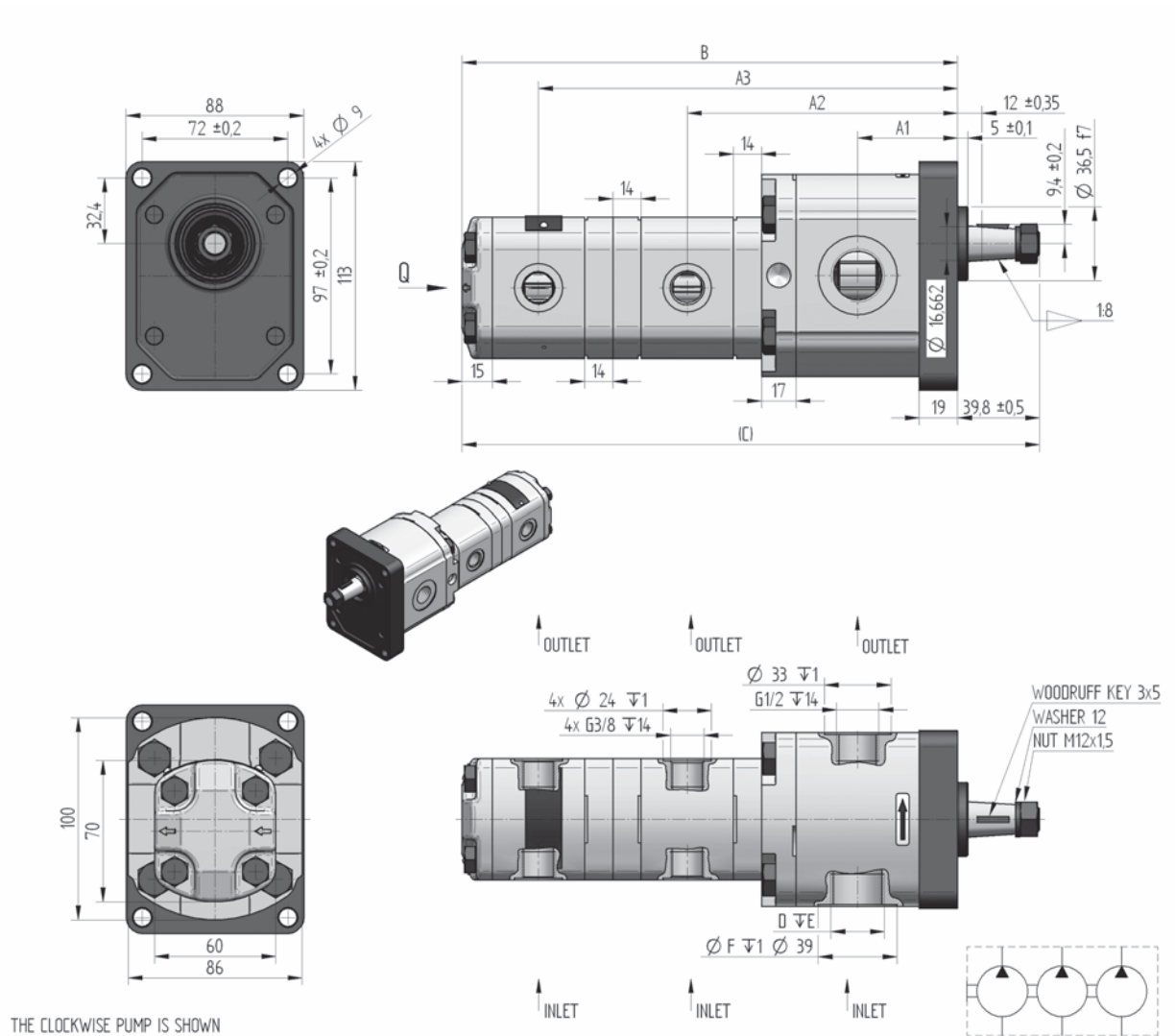


Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension					
							A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
T3-31R- S02D04-SG04G03-N	184 9289	R	31	150	500	2 200	63.7	128.5	160.6	G 3/4	16	39
T3-31L- S02D04-SG04G03-N		L										
T3-25R- S02D04-SG04G03-N	184 9288	R	25	200	500	2 800	59.0	119.1	151.2	G 3/4	16	39
T3-25L- S02D04-SG04G03-N		L										
T3-20R- S02D04-SG04G03-N	184 9287	R	20	240	500	3 200	55.0	111.2	143.3	G 3/4	16	39
T3-20L- S02D04-SG04G03-N		L										
T3-16R- S02D04-SG04G03-N	184 9286	R	16	260	500	3 200	51.9	104.9	137.0	G 3/4	16	39
T3-16L- S02D04-SG04G03-N		L										
T3-12R- S02D04-SG04G03-N	184 9285	R	12	260	500	3 600	48.8	98.6	130.7	G 3/4	16	39
T3-12L- S02D04-SG04G03-N		L										
T3-8R- S02D04-SG03G03-N	184 9284	R	8	280	500	3 600	45.6	92.3	124.4	G 1/2	14	33
T3-8L- S02D04-SG03G03-N		L										
T3-6R- S02D04-SG03G03-N	1849283	R	6	280	500	4 000	44.0	89.2	121.3	G 1/2	14	33
T3-6L- S02D04-SG03G03-N		L										
T3-4R- S02D04-SG03G03-N	184 9282	R	4	280	500	4 000	42.5	86.0	118.1	G 1/2	14	33
T3-4L- S02D04-SG03G03-N		L										



Other combinations are available after consultation.

Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension			
							A1 [mm]	A2 [mm]	B [mm]	C [mm]
T3-20/6R-S02D06-SH06H05/H06H05-N		R	20/6	240/280	500	3 200	55.0	120.8	165.9	197.8
T3-20/6L-S02D06-SH06H05/H06H05-N		L								
T3-16/4R-S02D06-SH06H05/H06H05-N		R	16/4	260/280	500	3 200	51.9	113.0	156.5	188.4
T3-16/4L-S02D06-SH06H05/H06H05-N		L								
T3-12/6R-S02D06-SH06H05/H06H05-N		R	12/6	260/280	500	3 600	48.8	108.2	153.3	185.2
T3-12/6L-S02D06-SH06H05/H06H05-N		L								
T3-8/8R-S02D06-SH06H05/H06H05-N		R	8/8	280	500	4 000	45.6	103.5	150.2	182.1
T3-8/8L-S02D06-SH06H05/H06H05-N		L								
T3-6/6R-S02D06-SH06H05/H06H05-N		R	6/6	280	500	4 000	44.0	98.8	143.9	175.8
T3-6/6L-S02D06-SH06H05/H06H05-N		L								



More information about pumps of P23 series in relevant catalogue.

Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension							
							A1 [mm]	A2 [mm]	A3 [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
T3-16/P23-2.5/2.5R-R05C07-SG04G03/G02G02/G02G02-N		R	16/2.5/2.5	280	500	3 200	51.9	136.6	206.1	241.9	281.7	G 3/4	16	39
T3-16/P23-2.5/2.5L-R05C07-SG04G03/G02G02/G02G02-N		L												
T3-12/P23-2.5/2.5R-R05C07-SG04G03/G02G02/G02G02-N	184 9290	R	12/2.5/2.5	280	500	3 600	48.8	130.3	199.8	235.6	275.4	G 3/4	16	39
T3-12/P23-2.5/2.5L-R05C07-SG04G03/G02G02/G02G02-N		L												